

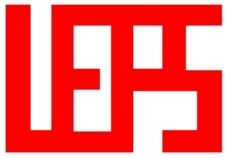


Power Protection Check List

To enable LEPS's Application Engineering staff to recommend appropriate power surge and transient protection, the following information is required. As a guide there are a number of areas to address when prescribing SPDs.

As a guide:

- * Protection should be installed at the power service entrance to each building (normally at the main panel board)
 - * If the equipment(s) to be protected is more than 30' from the service entrance, or the closest SPD, then an additional SPD is required at the equipment
 - * Any power feeds to outside of the protection zones, such as aircraft warning beacons, may need protection to stop transients entering from this source
- 1: Is the site in a high, medium or low lightning exposure location?
 - 2: Does a history of site damage or equipment reliability exist? If so provide full details. (Is this linked to some other event, such as operation of other equipment? How often has it occurred?)
 - 3: What is the economic risk of the site? (Low, medium or high). This is decided by the value of the equipment that could be damaged, the cost of any down time, or the strategic importance of the continued operation of the site for safety reasons.
 - 4: Is the power to the site supplied by any overhead cabling within 1500 foot of the point of entry?
 - 5: Obtain a single line diagram of the site.
Ensure this details:
 - The power distribution type being used
 - Single, split or three phase (star or delta)
 - * 2W+G, 3W+G, WYE 3W+G, WYE 4W+G, Delta 4W+G, Delta 3W, Delta 3W+G
 - * The grounding method of the supply transformer if not detailed in above
 - * Advise if the main service entrance does not have a Neutral to Ground bond
 - * The nominal voltages (L-N & L-L) and frequency
 - The maximum load currents at the point the SPDs are to be installed
 - 6: Does the facility power supply exhibit poor voltage regulation? What is the maximum expected over-voltage?
 - 7: If the facility is greater than 30 x 30' or has multiple buildings, provide a drawing showing each building floor plan, equipment location and line diagram showing which circuits feed each type of equipment below. (Electrical equipment such as pumps, heating, lights etc do not need to be detailed):
 - Electronic equipment such as office equipment, UPS's, computers, PLCs & industrial controllers, fire and security alarms etc
 - Electrical equipment that may generate excessive electrical noise such as motor speed controls, power factor control banks, welding equipment etc



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- 8: For expected SPD installation locations, detail the maximum space available, together with environmental conditions expected:
 - Maximum and minimum temperature
 - Maximum humidity
 - Environmental rating required (IP/NEMA Type)

- 9: Are there any external power feeds from the buildings such as?:
 - To aircraft warning (obstruction) lights
 - Feeds to other buildings or external equipment

- 10: Is there an existing ground system, or does one need to be installed? What is the resistance of the existing ground system.

- 11: Is all the equipment in each building connected to one “main grounding bar”? Is this one MGB connected via a single connection to the external grounding system. If multiple ground connections are made to the external ground system sketch how the equipment and all the grounds are interconnected to allow an evaluation if ground loops may be present.